

B9

--Comparison of emission rate--.

Page 20, please delete the paragraph beginning at line 6 and ending at line 6, and replace with the following paragraph.

B10

--Comparison of IC50--.

IN THE CLAIMS

✓ Please cancel claims 1-13.

Please add the following claims.

B11  
--14. (New) An isolated polypeptide, wherein said isolated polypeptide is a recombinant and mutagenized polypeptide having luciferase activity; said isolated polypeptide is derived from an organism belonging to Order Coleoptera; and said isolated polypeptide has improved luciferase activity in the presence of a surfactant compared to a luciferase in which a mutation has not been introduced.

15. (New) The isolated polypeptide according to Claim 14, wherein said organism belongs to the Family Firefly.

16. (New) The isolated polypeptide according to Claim 14, wherein the surfactant is a cationic surfactant.

17. (New) The isolated polypeptide according to Claim 16, wherein the cationic surfactant is benzalkonium chloride.

18. (New) The isolated polypeptide according to Claim 14, wherein the luciferase activity of said isolated polypeptide is not less than 89.3% in the presence of a surfactant compared to the luciferase activity in the absence of a surfactant.

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19. (New) The isolated polypeptide according to Claim 18, wherein the luciferase activity of said isolated polypeptide is not less than 89.3% in the presence of at least 0.1% of the surfactant compared to the luciferase activity in the absence of a surfactant.

20. (New) The isolated polypeptide according to Claim 14, wherein an amino acid corresponding to that at the 490 position of luciferase from Genji or Heike firefly is substituted by an amino acid other than glutamic acid.

21. (New) The isolated polypeptide according to Claim 14, wherein said isolated polypeptide comprises an amino acid sequence of SEQ ID NO:4.

22. (New) The isolated polypeptide according to Claim 14, wherein said isolated polypeptide comprises an amino acid sequence comprising additions, deletions, or substitutions of one or more amino acids except for an amino acid corresponding to that at the 490 position in the amino acid sequence shown in SEQ ID NO:4.

23. (New) The isolated polypeptide according to Claim 14, wherein said isolated polypeptide comprises an amino acid sequence of SEQ ID NO:6.

24. (New) The isolated polypeptide according to Claim 14, wherein said isolated polypeptide comprises an amino acid sequence comprising additions, deletions, or substitutions of one or more amino acids except for an amino acid corresponding to that at the 490 position in the amino acid sequence shown in SEQ ID NO:6.

25. (New) An isolated polynucleotide, comprising a polynucleotide sequence that encodes the isolated polypeptide according to Claim 14.

26. (New) The isolated polynucleotide according to Claim 25, wherein the nucleotide sequence is SEQ ID NO:3 or SEQ ID NO:5.

27. (New) A recombinant vector, comprising the isolated polynucleotide according to Claim 25.

28. (New) A transformant, comprising the recombinant vector of Claim 27.

29. (New) A process for producing an isolated polypeptide, comprising culturing the transformant of Claim 28 in a medium.

30. (New) A method for measuring intracellular ATP, comprising  
extracting ATP from at least one cell;  
contacting the ATP with a bioluminescence reagent comprising the isolated polypeptide according to Claim 14 wherein the contacting causes bioluminescence; and